

Climate

Mat Zoanthids – *Zoanthus pulchellus*



Mat Zoanthids by Jacqui Stanley 2010

Activity Summary

In this lesson, students will learn about zoanthids. These organisms are related to anemones and live inside tubes that are buried in mud, sand or gravel. They have two rings of tentacles that are usually seen at night when the animals feed. Zoanthids are also closely related to corals and many of them have limited feeding requirements, as they contain symbiotic zooxanthellae. The zooxanthellae provides them with food and the zoanthids provide the zooxanthellae with protection. The mat zoanthid has a seemingly endless display of colors and they provide an inspiration for creating ocean art. Students will learn to use line to create texture and how use colors to create value.

Grade Level: 3 – 6

Time Frame: One class period

Materials:

Painting:

- Paper suitable for painting or crayons
- Poster paints and brushes

Crayons/pencils

Collage:

Construction paper

Scissors, Glue, Tape

Found Objects. Examples: hair ribbons, pipe cleaners, Q-tips

Magazine/newspaper/color chips from hardware store

Color Wheel

Samples of construction paper to illustrate contrast. Example" yellow and purple.

Learning Objectives

Art

Students will be able to:

Create artworks, using a variety of colors, forms and lines

Identify colors, textures, forms, and subjects in the environment

Identify connections between the visual arts and other disciplines in the curriculum

Science

Students will be able to:

Communicate observations and provide reasons for explanations

Use form to explain function

Use function to explain form

Vocabulary

ART

PATTERN – Artists create pattern by repeating a line, shape or color over and over again. Often a repetitive pattern will suggest movement.

CONTRAST – contrast colors are the opposite colors on the color wheel. They make something stand out. The greater the difference in colors, the more attention they attract.

Contrast cannot happen without the opposite color or line being present.

Example: purple is opposite yellow on the color wheel and it provides the best contrast color.

COLLAGE – is a piece of art made by pasting paper or objects or text on to cardboard or paper. The objects can be whatever you wish, for example tissue paper,

wrapping paper, newspaper pages, magazine pages, cardboard, foil, metal, plastic, fabric, wire, photographs, found objects such as feathers, or stones, and broken toys or appliances or cut up paintings that haven't worked, or paintings deliberately created to be collage elements.

SCIENCE

ZOANTHID – is a tube dwelling anemone. They can be buried in fine sand, mud or They have a central disc surrounded by two rings of tentacles. The tentacles nearly always remain hidden during the day – they come out at night to feed. The inner ring of tentacles often hides the mouth. They grow in dense mats on the reef and under antler coral. They are closely related to coral, and have nematocysts. They are colonial animals.

ZOOXANTHELLAE – are photosynthetic single-celled organisms that live inside marine animals and play an important part in the biology of coral reefs.

SYMBIOTIC – the living together of unlike organisms

COLONIAL – living in groups

NEMATOCYSTS – are individual cells, which can be used for defense, or capture of prey. The cells are known as stinging cells and can inject toxins and can sometimes be toxic to humans.

Preparation

Images of zoanthids – as many color examples as possible.

Projected image of Mat Zoanthids painting – see start of lesson plan

Color Wheel

Procedure

- 1) Look at the painting at the beginning of this lesson. The individual anemones or zoanthids are circular or disc shaped. Notice they are not all perfectly round circular animals. They are squashed together and that is how they grow and live. They form a mat beneath antler coral on the reef.
- 2) Decide where you are going to place your interpretation of the zoanthids. You may want to zoom in and show a few large zoanthids, as in the painting, or you may want to create more of them in a wide angle view.
- 3) Think about the colors. Many Zoanthids are beautiful colors. The painting

Shows Zoanthids painted in almost contrast colors – deep pink and different shades of green. Some other examples include earth tone, yellow and blue, green and orange. You may want to use torn strips of magazine paper to create an interesting background. You can also add pieces of text from a newspaper. If you are painting, pick up one color with your brush and then pick up another color so that one brush stroke will have two or more colors.

- 4) Decide on colors and view of the mat zoanthids.
- 5) Paint or make the background color of the zoanthids. In the painting, the background color is deep pink.
- 6) Think about the direction of the light. If it is falling on the top of the mat zoanthids, the top of your art work will be lighter than the bottom part of your painting or collage.
- 7) Remember, the zoanthids are colonial, they live in close groups, so some of the animals will be unusual shapes as they compete for room on the reef.
- 8) Now, decide on a color for the central part of the zoanthid. In the painting, the centre part is a dark green. Use lines radiating out from the centre to the edge of the disc to create texture.
- 9) Create the tentacles. There are two rows of tentacles and they may retract if they are disturbed or during the day when they are not feeding. You may want to have some zoanthids with tentacles extended and some where the tentacles are retracted.
- 10) Create the mouth of the zoanthid in the centre of your animal.
- 11) Share your beautiful mat zoanthids with your class!

Education Standards

National Education Standards	<p>ART : NA-VA.K-4.1 UNDERSTANDING AND APPLYING MEDIA, TECHNIQUES, AND</p> <p>PROCESSES</p> <p>NA-VA.K-4.2 USING KNOWLEDGE OF STRUCTURES AND FUNCTIONS</p> <p>SCIENCE: E.U.5 Form and function</p> <p>a. Form–Form is the shape of an object. The goal is for students to use form to explain function.</p> <p>b. Function–Function is the normal or characteristic action of anything. The goal is for students to use function to explain form.</p> <p>ENGLISH/LANGUAGE ARTS</p> <p>NCTE/IRA Standards</p> <p>3) Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.</p> <p>11) Students participate as knowledgeable, reflective, creative, and</p>
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	critical members of a variety of literacy communities.
Ocean Literacy Principles	The Ocean supports a great diversity of life and ecosystems

Evaluation

Students create their version of a colony of mat zoanthids and clearly show that they understand the use of shape, color contrast and texture.

Extension

In groups, students create a collage of mat zoanthids using torn strips of black and white newsprint and bright markers to show the zoanthids fluorescing at night.

Resources

<http://en.wikipedia.org/wiki/Zoantharia>

This site provides detailed information about zoanthids.

http://www.zoaid.com/index.php?module=Gallery2&func=main&q2_view=core.ShowItem&q2_itemId=15

This site is a comprehensive gallery of images showing the diversity of colors and shapes.

Acknowledgements:

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This lesson was developed for NOAA National Marine Sanctuary Programs by Jacqui Stanley from Young Audiences Arts for Learning.